

GENERAL REPORT ON THE ACTIVITIES OF THE CONFERENCE ON SOIL MECHANICS AND FOUNDATION ENGINEERING

For the information of those interested in the origin of this Conference, its preparatory organization, and the activities during the Conference week, the following report is written. At the same time it will serve as a permanent record of the most important events and of the chronological order of the meetings, which order could not be followed in the presentation of the papers and discussions in this volume. However, this report should not be considered as a complete record of all events that would be worthwhile recounting. It is only the setting, or frame, for a great many interesting happenings and personal contacts which will remain pleasant memories for those who have participated.

Purpose of the Conference and its Organization

The need for such a Conference originated in the difficulty for engineers, as well as specialists in the field of soil mechanics, to keep abreast of the increasingly rapid developments of scientific methods for the analysis of problems in Earth and Foundation Engineering. The celebration of the three hundredth anniversary of the founding of Harvard University provided a welcome opportunity to suggest to the authorities of Harvard University that such a Conference be included in the program of the Tercentenary Celebration. The response was most gratifying. The University agreed not only to finance this undertaking but also to provide free living quarters and other conveniences for the Members of the Conference.

Considerable thought was given to the organization of the Conference in order that the following primary purposes might be accomplished in the most efficient way:

- (1) To make a survey of investigations in progress in the various Soil Mechanics Laboratories of the world.
- (2) To collect as much information as possible on the recent developments in Earth and Foundation Engineering and to make them available to all interested engineers.
- (3) To compare and coordinate experiences and the results of research.
- (4) To initiate closer cooperation for the purpose of advancing the scientific study of problems in Earth and Foundation Engineering.

No restrictions were placed on the number of contributions, provided they were within the scope of the Conference. However, to make it financially possible that all papers could be included in the Proceedings and that, in order to stimulate discussions, these papers would be available in printed form prior to the Conference, certain restrictions in regard to the length of the papers which could be included in the printed Proceedings had to be adopted. Of the entire number of 160 contributions which were accepted prior to the Conference, only 20 were submitted in such complete form that the entire paper could not be printed. A list of these papers, and the addresses from where they can be borrowed, are contained in the Foreword to Volume II of the Proceedings.

In addition to the discussions which were presented at the Conference, and the written discussions, numerous oral and written comments were received on the contents of the Proceedings. Among these there were many of sufficient general interest to suggest that they be included among the discussions. Requests that such comments be contributed in the form of a written discussion were not always fulfilled. Therefore, the Editorial Board took the liberty of including some of them in the form of brief statements among the discussions, without naming the authors.

The language requirement was admittedly a hardship to many Members. On the other hand the use of a single language made it possible for two volumes of the Proceedings to be printed prior to the Conference; and the fact that only one language was used in the meetings and discussions has apparently been one of the important factors which contributed to the success of the Conference.

All contributions were classified according to subject matter into the following 15 groups:

- A. Reports from Soil Mechanics Laboratories on Testing Apparatus, Technique of Testing and Investigation in Progress.
- B. Exploration of Soil Conditions and Sampling Operations.
- C. Regional Soil Studies for Engineering Purposes.
- D. Soil Properties (with particular attention to shearing resistance and consolidation characteristics).
- E. Stress Distribution in Soils.
- F. Settlement of Structures.
- G. Stability of Earth and Foundation Works and of Natural Slopes (including stability of dams and weirs).
- H. Bearing Capacity of Piles.
- I. Pile Loading Tests.
- J. Earth Pressure against Retaining Walls, Excavation Sheet piling, Tunnel Linings, etc.

- K. Ground Water Movement and Seepage.
- L. Soil Problems in Highway Engineering including Frost Action in Soils.
- M. Methods for Improving the Physical Properties of Soils for Engineering Purposes, including Recent Developments in Constructing and Compacting Earth Fills.
- N. Modern Methods of Design and Construction of Foundations.
- Z. Miscellaneous. (Contributions which could not readily be classified into one of the above divisions; or which for technical reasons could not be included in the respective division.)

Throughout the entire Proceedings the contributions were arranged in accordance with the above grouping. Within each group the contributions are numbered consecutively. This system of classification, together with the general index and the author index, has proven so satisfactory that all papers, and the discussions presented in the meetings of the Conference, were rearranged to follow the same system for this volume. However, since it appears desirable to keep on record the actual progress of the meetings and other events of the Conference, a corrected and supplemented program is included in this report.

General Notes on the Membership of the Conference

Prior to the Conference numerous inquiries were received from engineers interested in the aims of the Conference who desired to obtain the Proceedings but found themselves unable to attend in person. In order to embrace as large an interested group as possible, the Committee on Organization created the grade of Absentee Member. Organizations were permitted to join as Absentee Members.

Originally the membership fee was set at \$5.00 which included the Proceedings and free living accommodations and other privileges during the Conference. However, when the Committee on Organization realized that the number of papers submitted would be more than twice the estimated number and hence the printing costs more than doubled, it was decided that the membership fee should be ten dollars for those applying after May 15, 1936. The special rate of four dollars for libraries was also discontinued after that date.

A complete membership list arranged according to countries, is contained in the Appendix of this volume. The total membership consists of 206 Participating Members and of 181 Absentee Members.

Record of Meetings and other Events of the Conference

Friday Afternoon, June 19.

Members arriving at the Hotel Shelton in New York City were met and welcomed by the members of the New York Reception Committee, composed of distinguished American engineers. Members of the Conference were supplied with maps and printed information concerning outstanding engineering projects and other points of interest in New York and with the program for the official reception, to be held that evening, and for the excursions on the following days.

At 7:00 P.M. the company assembled in a private dining-room on the 64th floor of the R. C. A. Building, Rockefeller Center, where Members and their families were cordially welcomed by the members of the Reception Committee, other invited engineers from New York, and their wives. Cocktails and other refreshments were served and brief remarks of welcome were spoken by Mr. Robert Ridgway, President Karl von Terzaghi, and the Secretary. The company then moved up to the Rainbow Grill, on the 65th floor, where a section had been reserved for the dinner. The hearty welcome of the New York engineers and the excellent dinner created an atmosphere of mutual interest and goodfellowship which prevailed throughout the evening and extended to the meetings of the Conference.

Saturday, June 20. Excursion to West Point.

Busses carrying sixty-eight persons, including Members and their hosts and members of families, left the Shelton Hotel at 9:00 A. M. The route followed the famous Westchester County Parkways, passing the Kensico Dam and Croton Lake, crossing the Hudson River over the Bear Mountain Bridge to West Point, The United States Military Academy. After luncheon at the Thayer-West Point Inn, the grounds and various buildings of the Academy were visited. The return trip was made along the west side of the Hudson River to the George Washington Bridge; the bridge structure was inspected, and thence along Riverside Drive to the hotel.

Sunday, June 21. Excursion to New Jersey.

In the forenoon one group chartered a bus for a trip through the Holland Tunnel and over the New Jersey Elevated Highway to the Newark Airport. On the return trip a visit was paid to the top of the Rockefeller Tower from which a clear sky permitted a wonderful view of Manhattan and its surroundings. Other groups visited Museums, usually ending in a visit to the top of the Empire State Building or the Rockefeller Tower.

In the afternoon, at 3:00 P.M. the Members and some of their hosts who were planning to attend the Conference, left from Grand Central Station for Boston in a reserved, modern, air-conditioned car.

This ride to Boston was a pleasant interlude from the rather strenuous preceding days and it was only regretted that no arrangements had been made to serve tea. For here was a very friendly group of people, who though strangers two days before, were now attached to each other by many mutual interests.

Monday, June 22. First Meeting.

Forenoon

- 10.00 Opening of the Conference, Main Lecture Room in Pierce Hall, Graduate School of Engineering. Opening Remarks by A. Casagrande, presiding. (p. 11)
- 10.15 Address of Welcome by James Bryant Conant, President of Harvard University. (p. 11)
- 10.45 Address by President Karl von Terzaghi. (p. 13)
- 11.35 Address of Welcome by the Chairman of the American Committee, Vice-President Daniel E. Moran. (p. 18)

Second Meeting.

Afternoon - Ole Singstad, presiding

- 2.00-2.50 Lecture by Carlton S. Proctor (New York) on the Foundations of the San-Francisco-Oakland Bay Bridge. (N-10)
- 2.50-3.10 Opening Discussion by Lazarus White (New York) on Section N: Modern Methods of Design and Construction of Foundations. (N-14)
- 3.10-4.00 General Discussion: Jose A. Cuevas, Lazarus White, Karl v. Terzaghi. (N-15)
- 5.00 Reception by the President of Harvard University, at the President's House, for Members and their families. A delightful garden party which all members thoroughly enjoyed.
- 6.30 Weloome Dinner at the Harvard Union. Professor H. R. Mimno, Acting Dean, presiding. Members and their families were guests of the Faculty of Engineering. Address by Jerome D. Green, Director of the Harvard Tercentenary Celebration.
- 8.30 Visit to the Harvard University Museum (the famous Glass Flowers, the Harvard Forestry Exhibit, and other items of special interest).

Tuesday, June 23. Third Meeting.

Forenoon - Glennon Gilboy, presiding

- 9.00-9.40 Lecture by A. E. Bretting (Denmark) on the Foundations of Modern Bridges in Denmark. (N-11)
- 9.40-10.00 Motion Pictures on Soil Testing Procedures at the U. S. Army Engineers Soil Mechanics Laboratory, at Zanesville, Ohio. Comments by T. T. Knappen and R. R. Philippe. (U.S.A.)
- 10.00-10.20 Opening Discussions by D. W. Taylor (Cambridge, Mass.) on Section C: Regional Soil Studies for Engineering Purposes, and Section D: Soil Properties. (D-15)
- 10.20-12.00 General Discussion: H. F. Winterkorn, (D-16), D. M. Burmister (D-17), W. P. Kimball (D-18), G. Tschebotareff (D-19), P. Raes (N-16), C. A. Hogentogler (D-20), L. White (D-32), G. E. Ekblaw (D-21), L. F. Cooling (D-22).

Fourth Meeting

Afternoon - A. E. Cummings, presiding

- 2.00-2.40 Lecture by Jose A. Cuevas (Mexico) on Foundation Conditions in Mexico City. (N-17)
- 2.40-3.20 Lecture by W. S. Hanna and G. Tschebotareff (Egypt) on Settlement Observations in Cairo, Egypt. (F-1, Vol. I)
- 3.20-3.50 Opening Discussion by Karl von Terzaghi (Austria) on Section F: Settlement of Structures. (F-16)

3.50-5.00 General Discussion: D. M. Burmister (F-17), R. Tillman (F-18), W. Loos (F-20), K. v. Terzaghi (Z-22).

8.15 Pop Symphony Concert, Boston Symphony Hall. Members and their families were guests of Harvard University.

Wednesday, June 24. Fifth Meeting.

Forenoon - R. E. Bakenhus, presiding

9.00-9.50 Lecture by Prof. A. Agatz (Germany) on Experiences in the Construction of Harbor Works in Bremen and Bremerhaven. (N-12)

9.50-10.20 Opening Discussions by F. Kogler (Germany) on Section E: Stress Distribution in Soils (E-12); and by J. S. Crandall (Cambridge, Mass.) on Sections H and I: Bearing Capacity of Piles and Pile Loading Tests (H-7).

10.30-12.00 General Discussion: J. G. Mason (H-8), R. Pietkowski (H-9), R. D. Mindlin (E-13), D. M. Burmister (E-14), D. P. Krynine (E-15), L. White (H-10), P. Raes, (H-11), G. Tsohebotareff (H-12), C. S. Proctor (H-13), K. Haugeo (H-14), B. K. Hough (E-16), A. E. Cummings (H-11).

Sixth Meeting.

Afternoon - F. A. Marston, presiding

2.00-2.40 Lecture by G. Rodio (Italy) on the Foundation of the Building "La Basilese Vita" in Lugano, a Description of Modern Methods of Deep Foundation Construction. (N-13)

2.40-3.10 Lecture by W. Loos (Germany) on Comparative Studies of the Effectiveness of Different Methods for Compacting Cohesionless Soils. (M-5)

3.10-3.40 Motion Pictures on Modern Methods of Earth Dam Construction, with explanatory comments by T. T. Knappen and R. R. Philippe (Zanesville, Ohio).

3.40-3.50 Opening Discussions by H. A. Mohr (Cambridge, Mass.), on Section B: Exploration of Soil Conditions and Sampling Operations (B-9); and by Karl von Terzaghi (Austria) on Section M: Methods for Improving the Physical Properties of Soils for Engineering Purposes (M-6).

4.00-5.00 General Discussion: Daniel E. Moran (read by W. P. Kimball) (B-10), E. W. Vaughan (B-15), W. S. Housel (F-24), E. F. Bennett (B-11), H. E. Russell (B-13), D. M. Burmister (B-12), S. J. Buchanan (B-14), C. S. Proctor (Proposal for continuation of the work of the Conference see p. 5).

6.30 Committee on Bearing Value of Pile Foundations of the American Society of Civil Engineers. Dinner Meeting. (H-18)

8.00-10.30 For Members and their families: Group visits to the Soil Mechanics Laboratories of the Massachusetts Institute of Technology and of Harvard University, with demonstrations.

Thursday, June 25. Seventh Meeting.

Forenoon - L. F. Harza, presiding

9.00-9.40 Lecture by K. R. Kennison and S. M. Dore (Boston, Mass.) on the Quabbin Project of the Metropolitan District Water Supply Commission, with special emphasis on those features which were to be inspected by the members on the following day.

10.00-10.20 Motion Pictures on the Construction of the Largest Hydraulic Fill Dam in the World, at Fort Peck, Montana, with explanatory comments by G. A. Hathaway and T. A. Middlebrooks.

10.20-11.00 Opening Discussions by J. D. Justin (Philadelphia) on Section K: Ground Water Movement and seepage (K-5); and by F. A. Marston and Glennon Gilboy (Cambridge, Mass.) on Section G: Stability of Earth and Foundation Works and of Natural Slopes. (G-10 & 11)

11.00-12.00 General Discussion: D. W. Taylor (G-16), O. Stevens (K-9), J. Ehrenberg (G-14), T. T. Knappen (G-12), W. P. Craeger (K-6), T. A. Middlebrooks (G-15), D. M. Burmister (K-7).

Eighth Meeting

Afternoon - John R. Nichols, presiding

- 2.00-2.40 Lecture by G. Beskow (Sweden) on Frost Action in Soils and Its Relation to Highway Engineering. (L-13)
- 2.40-3.20 Motion Pictures on Irrigation in Mexico, with explanatory comments by F. Gomez-Perez.
- 3.20-3.50 Opening Discussions by A. Casagrande on Section J: Earth Pressure, (J-7); and by C. A. Hogentogler on Section L: Problems in Highway Engineering, (L-9).
- 3.50-5.00 General Discussion: K. v. Terzaghi (J-8), H. F. Winterkorn (L-10), R. D. Mindlin (J-9), E. F. Bennett (L-11), J. E. B. Jennings (J-10), D. M. Burmister (G-13), R. Tillmann (F-19), W. P. Kimball (F-22).
- 5.00-6.00 Special Meeting and Report of the Resolution Committee - C. R. Young, presiding. (see pp. 6-7)
- 8.00-10.30 For Members and their families: Group visits to the Soil Mechanics Laboratories of the Massachusetts Institute of Technology and of Harvard University, with demonstrations.

Friday, June 26. Excursion to the Quabbin Project of the Metropolitan District Water Supply Commission.

This trip was arranged as a joint excursion with the Boston Society of Civil Engineers. Over one hundred Members of the Conference enjoyed the excursion which was favored by pleasant weather conditions. While all construction details and the finished parts of the project were very interesting, particular attention was paid by the Members to the modern methods of earth transportation, the construction of rolled embankments, and all the details of the hydraulic sluicing process which is used for the construction of the major portion of the dams. (see Papers No. Z-14 and Z-15)

6.30 P.M. Farewell Dinner in the Banquet Hall of the historic Longfellow's Wayside Inn at Sudbury, Mass.

Other Members of the Conference and the Ladies had arrived at the Inn during the afternoon and visited the antiques which Henry Ford has collected to preserve the character of early American culture. In spite of the fact that Henry Ford does not permit alcoholic beverages in the Wayside Inn (which was not learned until all arrangements for the farewell dinner were complete) there prevailed a gay spirit throughout the evening. Frank E. Winsor presided during the after dinner addresses by F. E. Schmitt (p. 19), A. Agatz (p. 21), and K. v. Terzaghi (p. 22). When the President of the Conference ended his address wishing "many happy returns to the Conference", enthusiastic applause reflected the thoughts of all present.

Saturday, June 27.

Joint Meeting of the Committee on Foundations and Soil Mechanics of the Society for the Promotion of Engineering Education, and of the Committee on Standardization of Symbols and Conventions. (see report on p. 258).

Sunday, June 28 to Tuesday, June 30.

A group of twelve Members, mostly from European countries, visited projects of the New Hampshire State Highway Department. The visitors were particularly impressed by the excellent riding qualities and the durability of the tar-surface treated gravel roads which represent a large percentage of the state highways. The construction of such roads was inspected in all its details. During this excursion the visitors had ample opportunity to admire the scenic beauty of the White Mountains.

Suggestions for the Continuation of the Work of the Conference and Report by the Committee on Resolutions

At numerous informal occasions during the Conference one heard the desire expressed that the valuable work of the Conference and the splendid spirit of cooperation of its Members should be continued in form of an International Organization and that plans be made for a second Conference to meet a few years hence.

The following proposal regarding the continuation of the work of the Conference was presented by Mr. Carlton S. Proctor (New York) at the end of the sixth meeting, on June 24:

"It seems to me that this is the time to give some thought to the continuance of this International Conference. This grows out of a good deal of discussion which was had today at noon, by various members of the Conference, and rather than bring the idea up at the last moment when hasty action might be necessary, it seemed to a number of us that it would be wiser to start the ball rolling at this time to permit the opportunity for mature consideration and judgment.

I personally feel that this International Conference marks a milestone in the history of engineering, that the papers that have been presented here, the cooperative spirit, the attitude of engineer and research expert in giving to the engineering world such data and statistics as they have available, and in contributing toward the development of this new science, is such that we certainly must continue

this effort. A great opportunity will be lost if the Conference is not continued.

It seems to me that there are various suggestions that might be put into action. One is that the President appoint a committee to consider the whole matter of the continuation of the Conference. Another suggestion was that a permanent international society be formed. In any event, there seems to be a unanimity of opinion that some such international conference of this kind should be held again within a period not exceeding two years, and that a great deal of additional data will be available within that time. The thought is that we are accumulating data and accumulating records more rapidly and more accurately than ever before, and that with the accumulation of such data a permanent organization might be set in motion which would make available to the members of the Conference such papers and reports as are received, in the form, say, of one of these volumes of Proceedings, issued about once a year.

It has been thought that because of the very excellent work being done, and because of the central location, a conference of this kind might be held within a period of not exceeding two years in Holland, if Holland desires to invite the Conference. That is certainly an ideal location and there is certainly a great deal of excellent work being done there, as evidenced by the splendid papers presented here from Holland.

In any event, Mr. President, I would like to move at this time that consideration be given to the continuance of the Conference, and that you appoint a committee to consider this matter and report to the Conference, between now and the close of the Conference, and that thereafter by action of this group, the Conference be continued on a basis either as an international society or as an informal group. I would suggest that representative Chairmen of the various countries be appointed to the Committee and to discuss the matter with other members of the Conference and report before we adjourn. I so move."

The enthusiastic response to these remarks by Mr. Proctor led to the organization of a Committee on Resolutions under the chairmanship of Admiral R. E. Bakenhus. In this Committee were represented the National Committees of most of the countries which participated in the Conference. At the close of the last meeting, on June 25, a business meeting was called to order under the chairmanship of Professor C. R. Young in which Admiral R. E. Bakenhus read the following three resolutions which the Committee on Resolutions had prepared:

Resolution No. 1

Whereas the International Conference on Soil Mechanics and Foundation Engineering came into being and conducted its sessions as a result of the initiative and generosity of Harvard University as a part of its Tercentenary Celebration, and

Whereas the members of the Conference received unusual courtesies at the hands of Harvard University and enjoyed its hospitality, and

Whereas the facilities of Harvard University were made available to the sessions of the Conference, and the Conference now having demonstrated its value as an important forward step in the progress of Engineering

Be it resolved by the Conference assembled in meeting this 25th day of June 1936 that the Conference express its thanks and deepest appreciation to Harvard University and that the Secretary be authorized and directed to send a copy hereof duly signed by the President of the Conference and attested by the Secretary, to President Conant of Harvard University.

Resolution No. 2

Having in view the unqualified success of the International Conference on Soil Mechanics and Foundation Engineering, culminating in the meetings at Harvard University June 22 to June 26, 1936, as the first Conference of the Tercentenary Celebration of Harvard University, and, having further in view, the unusual initiative and labor upon which the preliminary organization and conduct of the Conference in session were dependent, be it resolved:

That the thanks of this Conference in meeting assembled this 25th day of June 1936 be extended

To: The Committee on Organization of which Dean Harry E. Clifford of the Graduate School of Engineering of Harvard University was Chairman and without whose support and guidance the Conference could not have been held.

To: The President of this Conference, Dr. Karl von Terzaghi, professor at Technische Hochschule in Vienna and visiting professor at Harvard University, in recognition of his wisdom and guidance of the affairs of the Conference, and particularly as he has given freely to the Conference and to the profession from his wide knowledge and experience such that he has been instrumental in the founding of the new science of Soil Mechanics.

To: Dr. Arthur Casagrande, Assistant Professor in the Graduate School of Engineering of Harvard University, Secretary of the Conference, in recognition of his leadership and initiative, of the herculean task performed in the preparation for and in the conduct of the meetings, of the editing of the technical papers for publication, of the management of the business and routine affairs of the Conference, and further through him to his able assistants, Mr. Philip C. Rutledge, Instructor in the Graduate School of Engineering of Harvard University, Treasurer of the Conference, and to Mr. John D. Watson, Research Assistant in the Graduate School of Engineering of Harvard University, who have loyally supported him in the heavy labors, and be it further resolved:

That copies of this resolution be forwarded by the Chairman of the Resolutions Committee through the President of Harvard University to

Dean Harry E. Clifford
Dr. Karl von Terzaghi
Dr. Arthur Casagrande
Mr. Philip C. Rutledge
Mr. John D. Watson

Resolution No. 3

In order that the International Conference on Soil Mechanics and Foundation Engineering may continue as a permanent organization, be it resolved

- a) That Dr. Karl von Terzaghi continue in office as President of the permanent organization;
- b) That Dr. Arthur Casagrande continue in office as Secretary and also fill the office of Vice-President;
- c) That all who are members of the present Conference be entitled to membership in the permanent organization; that additional members be admitted under requirements established by the International Committee;
- d) That the President take steps for the formation of an International Committee. Such a Committee would be elected by National Committees where such Committees exist, and where no such Committees exist, the President would appoint provisional members, and such members would be urged to take appropriate steps within their own countries to organize local National Committees in cooperation with existing societies or organizations, or otherwise to advise the President what steps, if any, are suggested for him to take to encourage the formation of such National Committees.
- e) That the President appoint an Executive Committee of which the President and the Secretary shall be members, consisting of a total membership of five, and whose headquarters shall, for the time being, be in Boston (Cambridge) Mass., or New York, N. Y., and that the Executive Committee shall be responsible for the conduct of the business of the Conference until a Constitution is adopted or the Conference shall direct otherwise.
- f) That the second meeting of the International Conference on Soil Mechanics and Foundation Engineering be called to meet at a time and place to be selected by the President with the advice of the International Committee.
- g) That each member pay annual dues to be fixed by the International Committee. That provision be made for membership in the Conference of organized bodies with dues as fixed by the International Committee.
- h) That the President be authorized to accept contributions for the support of the Conference in addition to dues of members.
- i) That the Secretary have custody of the funds of the Conference, to be expended for the purposes of the Conference as authorized by the President or by the Executive Committee until a permanent Constitution may provide otherwise.
- j) That at the next meeting of the International Conference the International Committee, or a sub-committee thereof as the President may appoint, present for the consideration of the Conference a Constitution and By-laws for the permanent organization and government of the Conference.
- k) That conflicting clauses and cases not covered by the foregoing clauses be left to the initiative of the Executive Committee with the approval of the International Committee for decision.

Resolutions No. 1 and 2 were adopted with hearty applause. Some discussion developed regarding Resolution No. 3. It was suggested that the activities of the American Society of Civil Engineers in the field of Soil Mechanics would make the existence of an independent National Committee unnecessary. Finally, Resolution No. 3 was voted upon, and with only one opposing vote, it was adopted.

In Resolution No. 3 are contained all essential elements to insure the continuation of the work of the Conference. At present, the principal efforts are directed toward the organization of the International Committee which, in cooperation with the Executive Committee and the National Committees, shall have the duty to organize future Conferences, to assist in the organization of new National Committees, and to expand and coordinate all activities into an International Society at such future time as may become advisable to do so.

It is proposed that each country shall be represented on the International Committee by not more than three members who shall be nominated by the respective National Committee and where no such Committee exists, three provisional members shall be appointed by existing engineering societies or organizations. It is further proposed that the Executive Committee with the approval of the International Committee, shall have the right to nominate one additional member without consulting the respective National Committee.

The members of the International Committee shall communicate by correspondence, and decisions and other matters of general importance will be made available through the National Committees to all persons interested in the activities of the International Organization.

Acknowledgement

The writer wishes to fulfill his pleasant duty of thanking all who participated in the Conference, Its splendid success was due primarily to the intense interest and hearty cooperation of all Members of the Conference.

To President James B. Conant of Harvard University, to Dean H. E. Clifford of the Harvard Graduate School of Engineering and Mr. Jerome D. Green, Director of the Harvard Tercentenary Celebration, are due the sincere thanks of the civil engineering profession for fulfilling an urgent and important service by opening the doors of Harvard University to this Conference and for making this undertaking financially possible.

The success of the Conference is in a large measure due to the invaluable work of its President, Professor Terzaghi, who has not only contributed to the Proceedings the most outstanding papers on Soil Mechanics which have appeared for many years, but who has aided also in the organization of the Conference and actively assisted the Editorial Board in its difficult task. During the meetings of the Conference Professor Terzaghi succeeded brilliantly in stimulating interest in the discussions. His own discussions, contained in this volume, will be an unfailing guide for those students of soil mechanics who find themselves bewildered by the quantity of material and the differences of opinion contained in the many papers.

The thanks of the Committee on Organization are extended to the New York sections of the American Society of Civil Engineers and of the Harvard Engineering Society, who were the hosts at a delightful reception and dinner and interesting and instructive excursions prior to the Conference for those members, particularly from foreign countries, who arrived first in New York. In particular Mr. Robert Ridgway (New York), Chairman of the Reception Committee, and Mr. Thomas Crimmins (New York) deserve high praise for their thorough planning of these events.

Through the kind cooperation of Mr. Frank E. Winsor, Chief Engineer of the Metropolitan District Water Supply Commission of Greater Boston, and of his Associates, the interesting and appropriate excursion to the Quabbin project of the Commission was made possible.

Mr. F. E. Everett, Highway Commissioner of the State of New Hampshire, and his engineers, L. F. Johnson and J. O. Morton, provided the opportunity for a pleasant and an instructive inspection trip through that State.

The following members of the Faculty of the Harvard Graduate School of Engineering, C. H. Berry, F. R. Ellis, G. M. Fair, A. Haertlein and R. P. Siskind, have rendered valuable assistance in the organization and technical arrangements for the Conference.

And last but not least the writer wishes to express his gratitude to his immediate associates, P. C. Rutledge and J. D. Watson, who have worked tirelessly on the innumerable tasks and the large amount of routine work which preceded the Conference. Particularly the preparation of the Proceedings and their successful completion in so short a time would not have been possible without their admirable devotion to the cause and their intelligent planning.

The Proceedings were printed by the Spaulding Moss Co. of Boston, using the Planograph process. Considering the unusually short time which was available for the printing of the first two volumes, their appearance has been very satisfactory to the Editorial Board.

Cambridge, Mass.
October 1, 1936

Arthur Casagrande
Secretary to the Conference

TREASURER'S REPORT

Summary of Expenses of the Conference.

Publication of Proceedings of the Conference in three volumes, totaling 992 pages	\$5044.62
Publicity prior to the Conference	\$ 536.40
Meetings and Entertainments during Conference	\$1447.75
	Total cost of the Conference \$7028.77

Note: This total cost does not include stenographic service under the item "Publicity" above, furnished by the Graduate School of Engineering, Harvard University; living accommodations and service provided for approximately 230 persons (Members and families) by Harvard University through the Tercentenary Celebration Office; the reception tendered to the Members and their families by the President of Harvard University; the reception and dinner in New York at which the New York sections of the American Society of Civil Engineers and the Harvard Engineering Society were hosts.

Income of the Conference.

From 206 Participating Members, 181 Absentee Members and the sale of the remaining sets of Proceedings to make a total of five hundred sets.

Cash Received as of November 20, 1936	\$3122.15
Accounts Payable as of November 20, 1936	\$ 74.00
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Total Receipts	\$3196.15

Note: Registration fees in the Conference, including the Proceedings, were \$5.00 from Dec. 2, 1935 to May 15, 1936, with a special rate of \$4.00 to engineering libraries. After May 15, 1936 the rate for registration in the Conference or purchase of the Proceedings was \$10.00. All Absentee Members have been assessed a shipping charge of \$1.00 per set of three volumes.

Net Deficit	\$3832.62
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This deficit has been met by Harvard University, the host to the Conference.

Itemized Expenses of the Conference.Proceedings

Volume I	Stenographic Salaries	\$ 372.13
	Editorial Salaries	122.00
	Office Equipment Rental and Supplies	89.46
	Printing, Binding, Etc.	1082.57
	Shipping Costs	100.11
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	Total Volume I	\$1766.27
Volume II	Stenographic Salaries	\$ 312.65
	Editorial Salaries	92.00
	Office Equipment Rental and Supplies	64.50
	Reprints included in Volume II	20.39
	Printing, Binding, etc.	1133.71
	Shipping Costs	99.60
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	Total Volume II	\$1722.85
Volume III	Stenographic Salaries	\$ 229.60
	Editorial Salaries	150.00
	Office Equipment Rental and Supplies	52.40
	Printing List of Members for Volume III	29.50
	Estimated Printing, Binding, etc.	946.00
	Estimated Shipping Costs	148.00
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	Total Volume III	\$1555.50
Totals for Volumes I, II, and III		
	Stenographic and Editorial Salaries	\$1278.38
	Office Equipment Rental and Supplies	206.36
	Reprints and Misc. Printing	49.89
	Printing, Binding, etc.	3162.28
	Shipping Costs	347.71
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	Total Volumes I, II, and III	\$5044.62

Note: For five hundred sets of Proceedings this is equal to a cost of \$10.09 per set of three volumes.

Publicity Prior to the Conference.

Printing Announcements, Stationary, etc.	\$ 310.78
Mailing Publicity Items	75.55
Office Equipment and Supplies	49.50
Miscellaneous Expenses	100.57
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Total	\$ 536.40

Note: All stenographic service under this account was furnished by the Graduate School of Engineering, Harvard University.

Meetings and Entertainments during the Conference.

Preparation of Buildings and Exhibits	\$ 259.23
Printing Programs and Lists of Members	121.75
Badges for Members	27.00
New York Excursions Saturday and Sunday, June 20 and 21	243.98
Note: All expenses of the reception and dinner in New York on the evening of Friday, June 19, were paid by the New York sections of the American Society of Civil Engineers and the Harvard Engineering Society.	
Welcome Dinner, Monday, June 22	253.75
Pop Symphony Concert, Tuesday, June 23, including bus transportation to and from Symphony Hall	275.50
Stenographic Report of the Conference Meetings	134.04
Projection of Slides and Moving Pictures	21.50
Excursion and Farewell Dinner, Friday, June 26	
Receipts from sale of tickets	\$489.00
Expenses: Bus transportation	\$295.50
Lunohes	69.00
Dinners	220.50
Total	\$585.00
Net Deficit for Excursion and Dinner	96.00
Deficit on Excursions for Ladies	15.00
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Total	\$1447.75

Cambridge, Mass.
November 20, 1936

Philip C. Rutledge
Treasurer to the Conference